Q: How do I register for an A2LA training course?
A: You may register for a course by clicking on “register now” on the A2LA website or http://www.A2LA.org/training/register.cfm or by contacting Julie Collins, A2LA Training Manager, at 301.644.3235 or via jcollins@A2LA.org. You will receive a confirmation letter with course details along with your invoice via email within 2 business days.

Q: Why are there two different prices listed for each course?
A: The lower price is for A2LA members and the higher is for non-members. Please note membership dues are separate and distinct from accreditation fees. An organization does not have to be a member to be accredited, and accreditation by itself does not confer membership. If you are interested in A2LA membership, please visit the following link on the A2LA website: http://www.A2LA.org/membership/member.cfm

Q: When is my payment due? What are my payment options?
A: Please submit payment at least two weeks prior to the course. If you have questions please contact Julie Collins, A2LA Training Manager, at 301.644.3235 or via email at jcollins@A2LA.org. A2LA accepts all major credit cards as well as checks for payment. You may pay online, by secure fax at 240.454.9449 or by contacting Brandy Rowe, A2LA Billing Specialist, at 301.644.3203 or via email at browe@A2LA.org.

Q: Are there discounts for multiple attendees from the same company?
A: Yes. For information regarding discounts, please contact Julie Collins, A2LA Training Manager, at 301.644.3235 or via email at jcollins@A2LA.org.

Q: Where will the course(s) be held?
A: With the exception of courses held at A2LA headquarters, each course is held at a hotel listed under “location” on the individual course page or under “venues” on the full training schedule page of the A2LA website.

Q: Do I need to make my own hotel reservation? Am I required to stay at the hotel listed in order to enroll in the training course?
A: Please call the hotel directly to make your reservation. You may stay at any hotel and are not required to stay at the A2LA-contracted venue. The hotel fee is not included in the training course registration fee.

Q: Is the daily rate for the hotel/venue discounted?
A: Yes. A2LA has secured a block of rooms at a discounted rate. Please mention A2LA when making your reservation and be sure to make your reservation on or before the “cut-off” date.

Q: Are meals included with my registration?
A: A continental breakfast, lunch, and afternoon break are included. You will be responsible for dinner. A2LA takes great care when selecting individual venues to ensure restaurants/eateries are within walking distance of the hotel.

Q: Will I need to rent a car? Is there shuttle service to/from the airport to the course venue?
A: Course venues are chosen so that rental cars are not a necessity. Restaurants etc. are located nearby for your convenience. Many hotels offer shuttle service. Please contact the hotel directly to inquire whether or not this service is available.

Q: Do I need to bring anything to class?
A: Unless otherwise noted in the course description, all materials will be provided at the start of each course.

Q: Is there a dress code?
A: No. Most people dress in business casual attire.

Q: Is a copy of the ISO standard included with my course registration?
A: You will indeed receive a licensed copy of the applicable ISO standard for each course, with the exception of the Measurement Uncertainty, Internal Auditing, and ISO/IEC 17025 for Accredited Laboratories courses.

Q: Will I receive a certificate of attendance following the course?
A: You will receive a certificate upon completion of the course, provided full payment has been received by A2LA.

Q: Is on-site training available for these courses?
A: On-site training is available for every public course we offer as well as for additional customized courses. Please visit the following link: http://www.A2LA.org/training/index.cfm# or contact Julie Collins at 301.644.3235 or via email at jcollins@A2LA.org for more information regarding on-site training.
Welcome to A2LA Training

A2LA has maintained a world-class training program for over two decades, providing a large variety of courses designed to help organizations achieve and maintain accreditation to international standards.

Courses have been developed to:

- Aid in establishing a management system that works with and enhances organizations as a whole.
- Guide prospective applicants through the assessment and internal audit processes.
- Aid in understanding how quality principles apply to various organizations.
- Explain specific concepts, such as root cause analysis, measurement uncertainty, etc.

A2LA has been very active in increasing the number and variety of training programs available to members, accredited organizations and the public. In addition to our traditional public courses, we also offer training provided at your location (upon request) as well as training partnerships with a variety of organizations.

A2LA is the largest U.S.-based, multi-discipline accreditation body with over 35 years of experience providing internationally-recognized accreditation services and quality training. A2LA’s world-class accreditation services encompass testing and calibration laboratories, medical testing laboratories, inspection bodies, proficiency testing providers, reference material producers and product certification bodies. Organizations are accredited to international standards and field-specific requirements developed with government and industry collaboration.

“A2LA is pleased that our training programs provide opportunities to learn from experts in their fields and to network with your peers. I trust that these programs will provide the tools for you to contribute more effectively to your organization’s continual improvement efforts.”

~Peter Unger, A2LA President & CEO
A2LA course instructors are industry experts and have many years of professional training experience. Most are current A2LA staff members or former or current A2LA assessors, which gives them unique knowledge of the accreditation process and standards.

Karin Athanas is Program Manager of the Forensic Accreditation Program at A2LA. She supports the day-to-day operations of accreditation by assisting Conformity Assessment Bodies (CABs) in obtaining and maintaining accreditation to ISO/IEC 17025 in the Mechanical, Chemical, Nondestructive, Acoustics and Vibration, Automotive, Aerospace and Forensic fields of testing as well as Inspection Body (ISO/IEC 17020) accreditation, which includes Crime Scene Analysis. Ms. Athanas has completed auditor training in the FBI Quality Assurance Standards for DNA testing and DNA databasing and oversees the FBI DNA QAS assessment program at A2LA. In addition, Ms. Athanas conducts training on the ISO/IEC 17020 and 17025 standards. After obtaining her Bachelor of Science in Biology from Arizona State University (2002), Ms. Athanas obtained her Master of Science in Forensic Science with a specialization in Crime Scene Investigation from the George Washington University (2005).

Mike Buzard is Program Manager of the Product Certification Program at A2LA. He supports the day-to-day operations of accreditation by assisting Conformity Assessment Bodies (CABs) in obtaining and maintaining accreditation to ISO/IEC 17025, ISO/IEC Guide 65, and ISO/IEC 17065. In addition, Mr. Buzard is the staff contact for the EPA ENERGY STAR program, the Design Lights Consortium and DOE Lighting Facts programs for lighting testing laboratories, and the Sustainable Energy field of testing. Mr. Buzard performs quality system assessments and also performs oversights of new and current assessors for A2LA. Mr. Buzard is also fully trained on the ISO/IEC 17020:2012 Inspection Body conformity assessment standard. Prior to joining A2LA, Mr. Buzard received his Bachelor of Science in Mathematics from Frostburg State University in Frostburg.

Elizabeth Carbonella is a Senior Accreditation Officer at A2LA. She supports the day-to-day operations of accreditation by assisting Conformity Assessment Bodies (CABs) in obtaining and maintaining accreditation in the Mechanical, Chemical, Nondestructive, Construction Materials and Geotechnical fields of testing as well as Inspection Body accreditation, which includes Special Inspections. Additionally, she performs on-site quality system assessments and performance oversight of A2LA assessors. She also conducts training on a variety of topics related to the ISO/IEC 17025 and ISO/IEC 17020 standards. Ms. Carbonella received her Bachelor of Arts in Mathematics with a minor in secondary education from Eastern University. She currently is the main A2LA point of contact for Special Inspection-related matters.

Greg Cooper is a California-licensed Clinical Laboratory Scientist and holds a Master of Science in Healthcare Administration. He has extensive experience with domestic and international laboratory operations in most major markets. He also participated in the development of the first version of ISO 15189 in 2003 as well as its latest revision in 2012. During his career, Mr. Cooper was a Chemistry Department Supervisor and Laboratory Manager and is now the owner of W. Gregory Cooper LLC, an enterprise advising medical laboratories on quality systems. He is also involved in the development of standards with the Clinical and Laboratory Standards Institute (CLSI). He is a former Chair of CLSI’s Evaluation Protocols Consensus Committee, and the CLSI Chairholder’s Council. Mr. Cooper is currently a member of the American Society of Quality and serves as a medical laboratory assessor for A2LA. In 2010 he gained certification from the American Society of Quality as a Certified Quality Auditor and he is a member in good standing in the Clinical Laboratory Management Association.
David Deaver has spent much of his career designing electronic test and measurement equipment for Hewlett Packard, Exact Electronics, Dynatech, as well as the Fluke Corporation where he served 11 years as the head of the Primary Standards Lab and corporate metrology. Mr. Deaver has been a regular author and presenter at conferences such as NCSL International (NCSLI), Measurement Science Conference, ASQ, and CPEM. In recognition of the work he has done in the calibration arena, he has received both the Woodington and Wildhack awards, the highest awards conferred by MSC and NCSLI, respectively. He retired from Fluke Corporation in 2009 and is now self-employed as an assessor and instructor for A2LA and consultant in metrology, uncertainty analysis and the ISO/IEC 17025 standard.

Robert Knake is the Proficiency Testing Provider (PTP) Program Manager with A2LA. He assists Conformity Assessment Bodies (CABs) through the process of accreditation and is responsible for maintaining documentation related to the PTP program. Mr. Knake serves as deputy for the A2LA Reference Material Producer Program and is the staff contact for laboratories in the calibration field. He is also a staff trainer and conducts training internally of new staff and assessors as well as externally at public training events for A2LA and other organizations. In addition, he serves as a Lead Quality System Assessor and performs oversight of new and current assessors. Mr. Knake has a Bachelor of Science in Industrial Management as well as an Associate of Engineering in Chemical Engineering Technology. Both degrees were obtained from Michigan Technological University. Mr. Knake also serves on the Board of Directors of NCSL International and as Operations Vice President of the Measurement Requirements and Analysis Committee. Previously he served NCSL International as Regional Coordinator and was responsible for organizing and facilitating local meetings and educational outreach events. Mr. Knake also represents A2LA on multiple NCSL International Committees and has served on ASME Committee B89.3.7 which developed a standard for granite surface plates.

Chris Gunning is Program Manager for the Environmental Sciences field at A2LA. He supports the day-to-day operations of accreditation by assisting Conformity Assessment Bodies (CABs) in obtaining and maintaining accreditation. He facilitates the assessment process for laboratories in the Biological, Chemical, Environmental, and Mechanical fields of testing. Mr. Gunning is the main point of contact for the Environmental discipline, including the Department of Defense Environmental Laboratory Accreditation Program, Wyoming Storage Tank Remediation Testing Laboratory Accreditation Program, Kentucky Underground Storage Tank Testing Laboratory Accreditation Program, and US EPA Environmental Lead Laboratory Accreditation Program (NLLAP). Mr. Gunning also provides ISO/IEC 17025 training both internally and publicly. Prior to joining A2LA, Mr. Gunning worked as a Senior Research Associate with GenVec Inc. in Gaithersburg, MD, where he was responsible for managing the production and testing of adenoviral vectors to be used in cancer therapeutics. Mr. Gunning has a Bachelor of Arts in Biology from Saint Mary’s College of Maryland.

Dawn Mettler is a quality systems assessor and technical consultant for biological, chemical, pharmaceutical, environmental and biodefense/select agent laboratories. In addition to her 25 years of experience in veterinary diagnostics, she has over 20 years of experience in performing microbiological and analytical processes, and 10 years of experience in the biodefense arena. Ms. Mettler holds a Bachelor of Science from The Ohio State University. She has held the positions of Quality Assurance Manager, Operations Manager, Chemical Safety Officer, Laboratory Specialist and Special Projects Manager for large food testing laboratories and R&D facilities. Ms. Mettler has performed over 200 assessments using the ISO/IEC 17025, ISO 9001, Guide 34/35, and ISO 17043 standards. She is an experienced trainer, has developed customized microbiological, chemical, & quality system courses and has presented over 100 training courses in the last seven years.
Ken Stoub conducts laboratory quality system training and assessments in the environmental, food, chemical, pharmaceutical, GLP, and animal drug testing areas. Mr. Stoub previously held the position of Laboratory Director and General Manager for the IT Corporation Environmental Laboratory in Santa Ana, CA. He also held positions as Senior Director and Vice President of the Waste Management Environmental Monitoring Laboratory in Chicago, IL, Director and Vice President of Shankman Laboratories, and was also owner and President of AgriScience Laboratories. Mr. Stoub has conducted over 200 assessments using the ISO/IEC 17025, ISO Guide 25, GLP and ISO 9001 standards, and has conducted over 50 training courses in these areas. Mr. Stoub is experienced in the development and use of qualitative and quantitative methods for organic and inorganic compounds and has specific expertise in wet chemistry, chromatography, spectroscopy, microscopy, and radiological testing areas. Mr. Stoub received his Bachelor of Science in Chemistry from Calvin College.

Werner Schaefer has spent much of his career designing, supporting and marketing electronic EMC and RF/microwave test and measurement equipment and test software for Hewlett Packard and Agilent Technologies. He was also the quality manager at Cisco Systems for all accredited laboratories. Mr. Schaefer serves as a lead assessor for A2LA in accordance with the ISO/IEC 17025, ISO/IEC 17020, and ISO/IEC 17025 standards. Mr. Schaefer has been a regular author and presenter at conferences such as IEEE EMC Symposia, where he has made at least 50 technical presentations. He is an active member on EMC committee ANSI C63 with subcommittees 1/3/6, as well as CISPR/A with subcommittees SC1 (chairman) and SC2 (member) and CISPR/B with subcommittee SC1 (member). He is also a member of ICAC (International Conformity Assessment Committee) and ISO CASCO. Mr. Schaefer was awarded the IEC 1906 Award in 2009. He is now self-employed as an assessor and instructor for A2LA and as a consultant in the areas of EMC testing, radio testing, RF/microwave testing, RF/microwave calibrations and uncertainty analysis as well as the definition and implementation of quality systems.

Dilip A. Shah has over 35 years of industry experience in metrology, electronics, instrumentation, measurement and computer applications of statistics in the Quality Assurance area. He has been employed in various positions with Philips Electronics, Kodak Ltd., Instruments Division of Monsanto Corporation, Flexsys America and Alpha Technologies. He is currently a Principal of E=MC3 Solutions, a consulting practice that provides training and consulting solutions in ISO/IEC 17025, ISO/IEC 9001/TS 16949. Measurement Uncertainty and computer applications. Mr. Shah is certified by American Society for Quality (ASQ) as a Certified Quality Auditor, Certified Quality Engineer and Certified Calibration Technician. He participated in the initial development of ASQ’s Certified Calibration Technician exam and participates actively in measurement-related issues through National Conference of Standards Laboratories International (NCSLI) and the west coast-based Measurement Science Conference (MSC), where he presents sessions, papers and workshops. In addition, Mr. Shah served as a member of the A2LA Board of Directors from 2006-2014.

Dr. Richard Turner and Barbara Turner - Richard Turner has a Ph.D. in Physics from Oxford University and was head of the National Metrology Laboratory of South Africa from 1970 to 1993. During that time he also initiated, established and managed the South African National Calibration Service (NCS) and was CEO from 1993 to 1996. He developed a system for estimating uncertainties for the NCS which was consistent with the internationally-accepted methods which appeared later. Dr. Turner also served as an assessor for A2LA for many years. Barbara Turner has an honors degree in mathematics and statistics from the University of London and a Master of Science (Survey) in Remote Sensing from the University of Natal. She has considerable experience in teaching and training at all levels including high school and university.
Dan Tholen is a consultant and educator in statistical methods for laboratory measurements. Principal clients include providers of quality control materials and proficiency testing programs, professional associations, and accrediting bodies throughout the world. He has participated in writing numerous national and international standards for ISO, ASTM, AOAC, and CLSI, including being convener of the ISO Working Group for ISO/IEC 17043:2010 (General requirements for proficiency testing), the convener of the Working Group for the revision of ISO 13528 (Statistical methods for proficiency testing), and he is a member of the working group for revision of ISO Guide 35 (Statistical methods for certification of reference materials). He works part-time as a Technical Expert for the US Centers for Disease Control, Division of Laboratory Systems, and is a Technical Consultant for A2LA as well as a Lead Assessor for the A2LA Proficiency Testing and Reference Materials programs. He is the ILAC Liaison to ISO TC 69 on Application of Statistical Methods. Mr. Tholen has a Master of Science in Biostatistics from the University of Michigan, and resides in Traverse City, Michigan.

Pamela Wright is the Calibration Accreditation Manager at A2LA and oversees the day-to-day operations of the calibration staff. She is also a Lead Assessor in Quality Systems and conducts oversights of both assessors and staff. She is responsible for the development and implementation of the calibration business plan as well as the maintenance and development of both external (national and international) and internal calibration documents. Ms. Wright is also a staff trainer, conducting training internally of new staff and assessors as well as externally at public training events, and speaks at many professional meetings and conferences. She is currently the Chair of WG2 for the NCSL International Committee 146 Accreditation Resources, Co-Chair of WG2 for the 171 Calibration System Resources Committee and is a voting member of the 174 Standards Writing Group (ACS Z540). Ms. Wright holds a Bachelor of Science in Biology from Towson University.

For complete biographical information about our course instructors please visit our website at www.A2LA.org/training/Biographies.cfm
This course is a comprehensive look at the ISO/IEC 17025:2005 requirements and a detailed approach to the assessment of a laboratory’s competence. The course is applicable to all testing and calibration laboratories and it provides an understandable explanation of the international laboratory standard and how it should be applied and implemented. In this course, you will receive a detailed review of the A2LA accreditation process and you will also gain critical insight into the interpretation of the requirements of this international laboratory standard.

COURSE CONTENT:
- Course introduction.
- Pre-course quiz.
- Conformity assessment concepts.
- Peer evaluation of accreditation bodies.
- Accreditation benefits and process.
- Management system concepts.
- Benefits of a quality manual and related documents.
- Use of exercises and discussions to understand critical processes:
  - Ethical constraints;
  - Organizational structures;
  - Management system structures;
  - Document development and control;
  - Customer contract development;
  - Quality-critical services and supplies;
  - Customer feedback, complaints and nonconforming work;
  - Corrective actions and preventive actions;
  - Internal audits and management reviews;
  - Analyst competency;
  - Method validation;
  - Measurement uncertainty;
  - Equipment calibration and maintenance;
  - Measurement traceability;
  - Sample handling;
  - Quality control;
  - Results reporting;
  - Review of ISO/IEC 17025 requirements;
  - Benefits of assessments and internal audits;
  - Selecting, training and qualifying assessors and internal auditors;
  - Communication skills and human relation aspects of an assessment;
- Planning assessments and internal audits;
- Conducting document reviews (gap analyses);
- Effective questioning and auditing techniques;
- Gathering information and evidence;
- Writing assessment findings and deficiencies; and
- A2LA assessor policies and procedures;
- Course review.
- Final examination.

TARGET ATTENDEES:
Laboratory assessors, lead assessors, laboratory directors and laboratory internal auditors.

PRE-REQUISITE:

EXAMS:
(a) Pre-Course Quiz to evaluate each attendee’s current awareness of ISO/IEC 17025 and assessment concepts; and
(b) Final Examination to demonstrate each attendee’s ability to apply the knowledge gained from this course. The passing grade for the Final Examination has been established at 70%. Additionally, throughout this course, the course instructor will be monitoring the attendees’ participation in all of its various activities.

Please visit our website at www.A2LA.org for additional information.
LEARNING OUTCOMES:
After successful completion of this course, attendees will be able to:
- Understand accreditation concepts and benefits;
- Design an appropriate quality manual and supporting system documents;
- Develop and implement required technical documents;
- Understand the difference between management reviews and internal audits;
- Develop and implement a detailed internal auditing program;
- Select, train and qualify internal auditors;
- Employ effective techniques for auditing;
- Base audit findings on the evidence identified during audits; and
- Handle difficult situations during audits.

CEUs AWARDED:
2.7 CEUs Awarded

PRESENTATION STYLE:
The course materials will be presented in an “interactive” lecture style (50%), as well by using application exercises and role playing (50%). The exercises are progressive in nature to facilitate the development of appropriate internal auditing techniques.

REFERENCE: ISO/IEC 17025:2005

SCHEDULE:
Days 1-4: 8:00 am - 5:00 pm
Day 5: 8:00 am - 12:00 pm

Please visit our website at www.A2LA.org for additional information.
This 2-day training course practices the internationally-recognized approaches of ISO 19011:2011 to conducting effective internal audits. The techniques learned promote the involvement of laboratory personnel. The course includes easy-to-implement methods for continual improvement and preparing for external assessments.

**COURSE CONTENT:**
- How to plan and conduct internal audits within laboratories.
- Auditing principles and techniques.
- Required skills.

**TARGET ATTENDEES:**
This course is appropriate for all laboratory staff who participate in the operation of the laboratory management system.

**PRE-REQUISITE:**
Experience working in a laboratory setting.

**EXAMS:**
An exam will be given to participants at the conclusion of the course to measure their understanding of the material presented.

**LEARNING OUTCOMES:**
Upon successful completion of this course, attendees will be able to:
- Understand the principles of auditing;
- Plan and schedule internal audits;
- Prepare for and conduct an internal audit;
- Apply internal audit interview techniques; and
- Compose nonconformance findings.

**CEUs AWARDED:**
1.2 CEUs Awarded

**PRESENTATION STYLE:**
The course materials will be presented in an “interactive” lecture style (50%), as well using application exercises and role playing (50%).

**REFERENCE:**
ISO 19011:2011
ISO/IEC 17025:2005

**SCHEDULE:**
Day 1: 8:00 am - 4:30 pm
Day 2: 8:00 am - 4:00 pm
Introduction to Measurement Uncertainty

This course is suitable for all personnel of both calibration and testing laboratories. Every effort is made to eliminate unnecessary complications, to apply The Guide to the Expression of Uncertainty in Measurement (GUM) at its simplest level and to take away the mystery associated with measurement uncertainty. Participants who have never developed uncertainty budgets usually develop the required skill well before the end of the class. Others who seek explanations of GUM complexities obtain clarifications expressed in simple terms. Measurement uncertainty problems are solved by brainstorming methods so as to generate interaction by all participants.

COURSE CONTENT:
- Introduction:
  - The need for uncertainty estimates;
  - References;
  - The GUM; and
  - Other more user-friendly material.
- Definitions.
- Estimating Uncertainties:
  - General statistics, distributions, confidence levels, standard deviation;
  - Random, systematic sources;
  - Type A and Type B methods;
  - Applying corrections;
  - Outside limit estimates;
  - How many measurements;
  - Combination of uncertainties;
  - Correlated vs. uncorrelated;
  - Expanded uncertainty; and
  - Reduced confidence.

TARGET ATTENDEES:
This course is designed for personnel working in calibration, metrology, testing or any other measurement fields.

PLEASE NOTE: This class is suitable for those laboratories whose tests and/or calibrations fall within the category of Type IV or V in accordance with A2LA’s P103 - Policy on Estimating Measurement Uncertainty for Testing Laboratories.

LEARNING OUTCOMES:
After successful completion of this course, attendees will be able to:
- Simplify the Guide to the Expression of Uncertainty of Measurement (The GUM);
- Identify, explain, and recognize key terms and definitions;
- Implement basic statistics;
- Maintain existing uncertainty budgets; and
- Formulate new uncertainty budgets.

PRE-REQUISITE:
There is no pre-requisite for this course.

EXAMS:
There is no exam for this course.

CEUs AWARDED:
1.2 CEUs Awarded

PRESENTATION STYLE:
Lecture, discussion, and group exercises.

REFERENCE:
The Guide to the Expression of Uncertainty in Measurement (GUM)

SCHEDULE:
Days 1-2: 8:30 am - 5:00 pm

Course Schedule
- June 15-16, 2015 – Detroit/Livonia, MI
  ($795.00 non-members, $745.00 A2LA members)
  Detroit Marriott Livonia  (734) 462-3100
  17100 North Laurel Drive, Livonia, MI 48152
  Rate: $129.00 per night
  (room rate cut-off:  May 22, 2015)
- September 21-22, 2015-Dallas, TX
  ($795.00 non-members, $745.00 A2LA members)
  Sheraton Dallas Hotel  (214) 922-8000
  400 North Olive Street, Dallas, TX 75201
  Rate: $169.00 per night
  (room rate cut-off:  August 30, 2015)
- November 16-17, 2015 – Savannah, GA
  ($795.00 non-members, $745.00 A2LA members)
  Savannah Marriott Riverfront  (912) 233-7722
  100 General McIntosh Blvd., Savannah, GA 31401
  Rate: $175.00 per night
  (room rate cut-off:  October 23, 2015)

Please visit our website at www.A2LA.org for additional information.
ISO 15189:2012 and CLIA Clinical Laboratory Accreditation

This two-day course will use lecture, discussion and interactive exercises to assist you in understanding the benefit of the newly revised and recently published ISO 15189:2012 standard. The CLIA portion of the seminar will focus on a new risk-based initiative recently introduced by CMS: The IQCP or Individualized Quality Control Plan.

COURSE CONTENT:
The course content includes a comprehensive look at the ISO 15189 clauses, risk concepts and tools and IQCP requirements allowing you to better:
- Design, control and implement documents and information;
- Manage arrangements with clients, referral laboratories and consultants, suppliers and advisory services;
- Identify, manage, monitor and learn from complaints and non-conformances;
- Use corrective and preventive action processes, internal audits and management reviews for continual improvement;
- Engage your human resource function;
- Effectively implement the key process inputs to the critical laboratory systems of pre-analytic, analytic, post-analytic and reporting phases;
- Compete and fully participate in the domestic and international laboratory marketplace;
- Effectively use robust tools to assess and manage laboratory risk;
- Know when and how to implement an IQCP;
- Meet ethical and professional obligations to the patients and laboratory users you serve; and
- Surpass minimal quality requirements set by many governments and regulatory agencies.

LEARNING OUTCOMES:
After successful completion of this course, attendees will be able to:
- Continuously be prepared for the on-going regulatory visits that are integral to the clinical laboratory business;
- Move from reactionary management to more proactive management in order to ensure best practices for patient health and care; and
- Better understand the intricacies of your business to facilitate continual improvement.

CEUs AWARDED:
1.2 CEUs Awarded

PRESENTATION STYLE:
This course will use lecture, discussion and interactive exercises.

REFERENCE:
ISO 15189:2012

SCHEDULE:
Days 1-2: 9:00 am - 4:00 pm

TARGET ATTENDEES:
Clinical laboratory management personnel.

PRE-REQUISITE:
There is no pre-requisite for this course.

EXAMS:
There is no exam for this course.

Course Schedule
- March 30-31, 2015-Frederick, MD
  ($795.00 non-members, $745.00 A2LA members)
  (*This course is held at A2LA Headquarters.)
- October 15-16, 2015-Frederick, MD
  ($795.00 non-members, $745.00 A2LA members)
  (*This course is held at A2LA Headquarters.)
* Please contact A2LA if you need recommendations for hotel accommodations.

Please visit our website at www.A2LA.org for additional information.
Measurement Performance Improvement Using Statistical Tools

In today’s business climate, it is important for the laboratory to be efficient in its operations including making continual measurement process improvements in the calibration and testing environment. Measurements made today are more precise and accurate and one cannot make a “decision on a hunch” as in the past. The measurement decision-making process, with its associated measurement uncertainty data, interpretations of specifications, and assignment of calibration intervals, requires use of statistical tools such as Statistical Process Control (SPC), False Accept Risk, Hypothesis Testing and others. The use of industry-proven tools covered in this workshop helps establish a laboratory’s reputation in providing the correct solutions to its customers and maintaining its accreditation.

**COURSE CONTENT:**
- Basic statistics using Excel, as applied to calibration and testing.
- Tools for estimating Type A measurement uncertainty.
- Statistical Process Control for monitoring data.
- Making statistical inferences and applying data to metrology for:
  - Measurement uncertainty;
  - Calibration interval analysis;
  - Monitoring trends; and
  - Measurement decision risk.

**TARGET ATTENDEES:**
This workshop is geared toward a laboratory that is in the process of obtaining accreditation or one that is already accredited and looking to improve its measurement processes. Quality and Technical Managers and laboratory technicians will find the tools and techniques learned useful for immediate application in their work environment.

**PRE-REQUISITE:**
Basic Mathematics and some familiarity with Microsoft Excel are required. Attendees are welcome to bring a laptop with Excel loaded for hands-on learning. At a minimum, a scientific calculator is required.

**EXAMS:**
Hands-on exercises/quizzes are conducted during the workshop for familiarization with the techniques learned and to encourage attendee participation.

**LEARNING OUTCOMES:**
After successful completion of this course, attendees will be able to:
- Apply tools and techniques learned during the workshop in their measurement processes;
- Apply the statistical capability of Microsoft Excel;
- Supplement tools for determining Type A measurement uncertainty data (Repeatability and Reproducibility); and
- Apply techniques for calibration interval analysis and other improvements to the measurement process.

**CEUs AWARDED:**
1.2 CEUs Awarded

**PRESENTATION STYLE:**
Lecture, interaction, and group exercises.

**SCHEDULE:**
Days 1-2: 9:00 am - 4:30 pm

**Course Schedule**
- June 9-10, 2015 – Frederick, MD
  ($795.00 non-members, $745.00 A2LA members)
  (*This course is held at A2LA Headquarters.)
* Please contact A2LA if you need recommendations for hotel accommodations.

Please visit our website at www.A2LA.org for additional information.
This course is an introductory look at ISO/IEC 17025 and its requirements for demonstrating the technical competence of testing and calibration laboratories. In this course, you will be introduced to the A2LA accreditation process and will gain insight into the interpretation of the requirements of this international laboratory standard.

**COURSE CONTENT:**
- Course Introduction.
- Registration vs. Accreditation vs. Certification.
- Mutual Recognition Agreements.
- A2LA Accreditation Process.
- ISO/IEC 17025:2005 - What the Standard Requires:
  - Requirements for a quality manual;
  - Document control;
  - Contracts with customers;
  - Purchasing quality-critical services and supplies;
  - Handling complaints and non-conforming work;
  - Corrective and preventive actions;
  - Records maintenance;
  - Internal auditing and management review processes;
  - Personnel training and authorization;
  - Test and calibration procedures;
  - Equipment calibration and maintenance;
  - Traceability to the SI;
  - Sample preparation;
  - Quality control; and
  - Test and calibration reports.
- A2LA Specific Requirements:
  - Advertising accreditation;
  - Reporting accredited results;
  - Traceability requirements for measurement equipment; and
  - Participation in proficiency testing.

**LEARNING OUTCOMES:**
After successful completion of this course, attendees will be able to:
- Recognize the differences between registration, certification and accreditation;
- Employ the concept of mutual recognition for determining competence;
- List the steps in the A2LA accreditation process;
- Utilize key word recognition techniques for the implementation of ISO/IEC 17025:2005 requirements;
- Identify the documents and records required by ISO/IEC 17025:2005; and
- Describe the A2LA policies for Traceability, Proficiency Testing and Advertising.

**TARGET ATTENDEES:**
Laboratory management and quality personnel.

**PRE-REQUISITE:**
There is no pre-requisite for this course.

**EXAMS:**
There is no exam for this course.

**CEUs AWARDED:**
- 2-Day Course: 1.2 CEUs Awarded
- 2.5-Day Course: 1.5 CEUs Awarded

**PRESENTATION STYLE:**
The course materials will be presented in an interactive lecture style (50%), as well by using application exercises and role playing (50%).

**REFERENCE:**
ISO/IEC 17025:2005

**SCHEDULE:**
- 2.5-Day Course:
  - Days 1-2: 8:00am-5:00pm
  - Day 3: 8:00am-12:00pm
- 2-Day Course:
  - Days 1-2: 8:00am-5:00pm

Please visit our website at [www.A2LA.org](http://www.A2LA.org) for additional information.
Course Schedule

- **March 18-19, 2015-Baltimore, MD**
  ($795.00 non-members, $745.00 A2LA members)
  (Please note that this is a 2-day version of the course.)
  **Baltimore Marriott Inner Harbor** (410) 962-0202
  110 S Eutaw Street, Baltimore, MD 21201
  Rate: $129.00 per night
  (room rate cut-off: February 15, 2015)

- **March 30-31, 2015-Frederick, MD**
  ($795.00 non-members, $745.00 A2LA members)
  (Please note that this is a 2-day version of the course.)
  (*This course is held at A2LA Headquarters.*)

- **April 13-14, 2015-Boulder, CO**
  ($795.00 non-members, $745.00 A2LA members)
  (Please note that this is a 2-day version of the course.)
  **Boulder Marriott** (303) 448-6632
  2660 Canyon Blvd., Boulder, CO 80302
  Rate: $199.00 per night
  (room rate cut-off: March 5, 2015)

- **May 6-7, 2015-Frederick, MD**
  ($795.00 non-members, $745.00 A2LA members)
  (Please note that this is a 2-day version of the course.)
  (*This course is held at A2LA Headquarters.*)

- **June 17-19, 2015-Detroit/Livonia, MI**
  ($995.00 non-members, $945.00 A2LA members)
  **Detroit Marriott Livonia** (734) 462-3100
  17100 North Laurel Drive, Livonia, MI 28152
  Rate: $129.00 per night
  (room rate cut-off: May 22, 2015)

- **September 15-16, 2015-Frederick, MD**
  ($795.00 non-members, $745.00 A2LA members)
  (Please note that this is a 2-day version of the course.)
  (*This course is held at A2LA Headquarters.*)

- **September 23-25, 2015-Dallas, TX**
  ($995.00 non-members, $945.00 A2LA members)
  **Sheraton Dallas Hotel** (214) 922-8000
  400 North Olive Street, Dallas, TX 75201
  Rate: $169.00 per night
  (room rate cut-off: August 30, 2015)

- **October 5-7, 2015-Frederick, MD**
  ($995.00 non-members, $945.00 A2LA members)
  (*This course is held at A2LA Headquarters.*)

- **November 18-19, 2015-Savannah, GA**
  ($795.00 non-members, $745.00 A2LA members)
  (Please note that this is a 2-day version of the course.)
  **Savannah Marriott Riverfront** (912) 233-7722
  100 General McIntosh Blvd., Savannah, GA 31401
  Rate: $175.00 per night
  (room rate cut-off: October 23, 2015)

- **December 2-3, 2015-Frederick, MD**
  ($795.00 non-members, $745.00 A2LA members)
  (Please note that this is a 2-day version of the course.)
  (*This course is held at A2LA Headquarters.*)

* Please contact A2LA if you need recommendations for hotel accommodations.

Please visit our website at [www.A2LA.org](http://www.A2LA.org) for additional information.
This is an advanced course in the application of ISO/IEC 17025 requirements. The course will provide a brief overview of the requirements of this laboratory standard, as well as provide an understanding of how to apply specific sections of the Standard in your laboratory. Employees of accredited laboratories may benefit from this expansion on their base knowledge of the Standard.

**COURSE CONTENT:**
- Discussion of commonly cited deficiencies and how to avoid them.
- Understanding documentation and record requirements.
- Understanding and implementing root cause investigation and corrective action processes.

**TARGET ATTENDEES:**
The course is intended for individuals with a good working knowledge of the Standard. It will be beneficial for laboratory scientists, quality professionals, managers, supervisors, team leaders, and others responsible for implementation of ISO/IEC 17025 requirements in an accredited laboratory setting.

**PRE-REQUISITES:**
- Understanding of the ISO/IEC 17025 Standard.
- Experience working within an accredited management system structure.

This course is intended to augment the knowledge of staff working in an accredited laboratory.

**EXAMS:**
A short exam will be given to participants at the conclusion of the course to measure their understanding of the material presented.

**LEARNING OUTCOMES:**
After successful completion of this course, attendees will be able to:
- Understand the clauses against which deficiencies are commonly cited;
- Recognize how to avoid commonly cited deficiencies;
- Interpret documentation requirements;
- Interpret record requirements; and
- Demonstrate how to perform root cause investigations.

**CEUs AWARDED:**
0.6 CEUs Awarded

**PRESENTATION STYLE:**
Lecture, discussion, and group exercises.

**REFERENCE:**
ISO/IEC 17025:2005

**SCHEDULE:**
Day 1: 8:00 am - 5:00 pm

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**Course Schedule**
- **March 19, 2015 – Baltimore, MD**
  ($495.00 non-members, $445.00 A2LA members)
  **Baltimore Marriott Inner Harbor** (410) 962-0202
  110 S Eutaw Street, Baltimore, MD 21201
  Rate: $129.00 per night (room rate cut-off: February 15, 2015)
- **September 28, 2015 – Columbus, OH**
  ($495.00 non-members, $445.00 A2LA members)
  **Hyatt Regency Columbus** (614) 463-1234
  350 N High Street, Columbus, OH 43215
  Rate: $165.00 per night (room rate cut-off: September 6, 2015)

Please visit our website at [www.A2LA.org](http://www.A2LA.org) for additional information.
The advanced course is designed to expand and extend the topics in the introductory course to include: metrology and accreditation, measurement uncertainty estimation, statistical methods for measurement uncertainty, applying the GUM, determining sensitivity and correlation coefficients, useful rules of thumb, satisfying the assessor, determining calibration intervals, guard-banding, risk, and the Z540.3 standard.

COURSE CONTENT:
- Review of Measurement Uncertainty Basics:
  - Metrology, traceability, calibration, testing, and accreditation;
  - The GUM philosophy and method; and
  - Uncertainty budgets.
- Useful Statistical Methods and Principals:
  - Review of the basic statistics used in the GUM; and
  - Additional statistical tools.
- Uncertainty Budget Templates.
- Uncertainty Software.
- Time-Saving Suggestions.
- Measurement Assurance and Validation.
- Compliance (pass/fail) Testing.
- Decision Rules.
- Measurement Decision Risk Analysis.
- Guard-Banding.
- Establishing Calibration Intervals.
- ANSI/NCSLI Z540.3.
- Defending the Budgets During an Assessment.

TARGET ATTENDEES:
This class is designed for personnel working in accredited calibration and testing laboratories who understand the basics of measurement uncertainty. The advanced course is designed to address topics of interest to those who have some responsibility for their laboratory’s policies and procedures for creating uncertainty budgets. However, anyone working in calibration, metrology, testing, or other measurement fields should find this class beneficial.

PRE-REQUISITES:
Attendees should be able to understand the basics of measurement uncertainty estimation. Knowledge of mathematics beyond basic algebra is not required. Basic understanding of statistics is beneficial. Familiarity with the basics of Excel is expected. Laptop computer with Excel is not required during course but is beneficial.

EXAMS:
There is no exam with this course.

LEARNING OUTCOMES:
After successful completion of this course, attendees will be able to:
- Develop new uncertainty budgets from scratch;
- Make decisions regarding the lab’s policies and procedures for developing uncertainty budgets;
- Leverage existing work to expedite budget development; and
- Defend the lab’s budgets during an assessment.

CEUs AWARDED:
1.2 CEUs Awarded

PRESENTATION STYLE:
This course will include a combination of lecture, discussion, and group exercises.

REFERENCE:
The Guide to the Expression of Uncertainty in Measurement (GUM)

SCHEDULE:
Days 1-2: 8:30 am - 5:00 pm

Course Schedule
- April 20-21, 2015 – Frederick, MD
  ($795.00 non-members, $745.00 A2LA members)
  (*This course is held at A2LA Headquarters.)
- October 8-9, 2015 – Frederick, MD
  ($795.00 non-members, $745.00 A2LA members)
  (*This course is held at A2LA Headquarters.)
* Please contact A2LA if you need recommendations for hotel accommodations.

Please visit our website at www.A2LA.org for additional information.
This workshop provides guidance for testing laboratories in estimating measurement uncertainty for the test methods on their Scope of Accreditation. While calibration measurement uncertainty budgets have become fairly standardized for most parameters, this is not so for test methods. There are thousands of different test methods and uncertainty budgets for one method may not be appropriate for another.

This workshop teaches the use of several tools and techniques that a lab may apply in their testing environment. The tools are generic in nature such that they may be applied to various testing laboratories.

**COURSE CONTENT:**
- Metrology terminology and definitions.
- Requirements for metrological traceability.
- Statistical applications using microsoft excel.
- The uncertainty estimation process.
- Repeatability and reproducibility methods.
- Development of the test uncertainty budget.
- Understanding and reporting measurement uncertainty in test reports.

**TARGET ATTENDEES:**
Laboratory technical managers and test technicians.

**PRE-REQUISITES:**
Knowledge of Excel spreadsheet use.
Basic math and statistics.

**EXAMS:**
There is no exam for this course.

**LEARNING OUTCOMES:**
After successful completion of this course, attendees will be able to:
- Define the contributors for testing laboratory uncertainty estimation;
- Determine how contributors are considered for inclusion in the uncertainty budget; and
- Build a Test Measurement Uncertainty Budget.

**CEUs AWARDED:**
1.2 CEUs Awarded

**PRESENTATION STYLE:**
Lecture, discussion, and group exercises.
Hands-on exercises using Microsoft Excel provide a practical approach that enables the attendees to apply the methods in their particular testing application during and after the workshop. Several Excel templates and tools are provided for the attendees to implement.

Please bring a laptop with Microsoft Excel or compatible spreadsheet loaded in the computer for a truly interactive workshop.

**REFERENCE:**

**SCHEDULE:**
Days 1-2: 9:00 am - 4:30 pm

**Course Schedule**
- March 25-26, 2015 – Frederick, MD
  ($795.00 non-members, $745.00 A2LA members)
  (*This course is held at A2LA Headquarters.)
- May 12-13, 2015 – Frederick, MD
  ($795.00 non-members, $745.00 A2LA members)
  (*This course is held at A2LA Headquarters.)
- September 17-18, 2015 – Frederick, MD
  ($795.00 non-members, $745.00 A2LA members)
  (*This course is held at A2LA Headquarters.)
* Please contact A2LA if you need recommendations for hotel accommodations.
The Root Cause Analysis and Corrective Action (RCA/CA) course consists of presentations, discussions and exercises that provide participants with an in-depth understanding of how to analyze a system in order to identify the root causes of problems and to prevent them from recurring.

**COURSE CONTENT:**
- Term definitions.
- Root cause definition.
- Problem solving process.
- Corrective actions.
- Thoughts about RCA & CAs.

**TARGET ATTENDEES:**
Laboratory scientists, quality professionals and others responsible for troubleshooting technical problems; corrective action coordinators; managers, supervisors, team leaders, process owners, and anyone who wants to improve their ability to solve problems.

**PRE-REQUISITE:**
There are no prerequisites, although familiarity with standard problem-solving models (e.g. 5-Whys, Fishbone diagrams, ISO/IEC 17025 corrective actions, etc.) and various quality tools would be useful.

**EXAMS:**
There is no exam for this course.

**LEARNING OUTCOMES:**
After successful completion of this course, attendees will be able to:
- Differentiate between remedial actions and root cause analysis;
- Implement steps for carrying out effective root cause analysis;
- Select from and apply various tools that support root cause analysis;
- Support and critique root cause analyses carried out by others; and
- Implement and monitor appropriate corrective actions.

**CEUs AWARDED:**
0.6 CEUs Awarded

**PRESENTATION STYLE:**
The course materials will be presented in an “interactive” lecture style (50%), as well using application exercises and role playing (50%).

**REFERENCE:**
ISO/IEC 17025:2005

**SCHEDULE:**
Day 1: 8:00 am - 5:00 pm

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**Course Schedule**
- **April 1, 2015 – Frederick, MD**
  ($495.00 non-members, $445.00 A2LA members)  
  (*This course is held at A2LA Headquarters.)
- **April 15, 2015 – Boulder, CO**
  ($495.00 non-members, $445.00 A2LA members)  
  Boulder Marriott (303) 448-6632  
  2660 Canyon Blvd., Boulder, CO 80302  
  Rate: $199.00 per night  
  (room rate cut-off: March 5, 2015)
- **May 8, 2015 – Frederick, MD**
  ($495.00 non-members, $445.00 A2LA members)  
  (*This course is held at A2LA Headquarters.)
- **November 20, 2015 – Savannah, GA**
  ($495.00 non-members, $445.00 A2LA members)  
  Savannah Marriott Riverfront (912) 233-7722  
  100 General McIntosh Blvd., Savannah, GA 31401  
  Rate: $175.00 per night  
  (room rate cut-off: October 23, 2015)

Please visit our website at www.A2LA.org for additional information.
This course provides a description of the requirements of ISO Guide 34, as well as the associated definitions of terms in ISO Guide 30, the requirements for statistical methods in ISO Guide 35, and the requirements for descriptive information in ISO Guide 31. A2LA policies and the obligations and requirements associated with the Mutual Recognition Agreement with APLAC are also presented. The need for characterization, homogeneity, stability and uncertainty for all types of reference materials is discussed, along with requirements for the content of accompanying documents, such as certificates and product sheets. Statistical methods in the current and proposed ISO Guide 35 are addressed in examples and exercises.

**COURSE CONTENT:**
- Types of reference materials (certified reference materials/reference materials).
- Uses of certified reference materials.
- Uses of non-certified reference materials (quality control, method verification, proficiency testing).
- Application of ISO Guide 35 for statistical methods to qualify CRMs.
- Application of ISO Guide 31 for certified reference material certificate content.
- National and international practices.

**TARGET ATTENDEES:**
Reference material producers, accreditation bodies, assessors.

**PRE-REQUISITES:**
Expertise in a technical field of measurement where reference materials are used or needed.

**EXAMS:**
An exam will be given to participants at the conclusion of the course to measure their understanding of the material presented.

**LEARNING OUTCOMES:**
After successful completion of this course, attendees will be able to:
- Understand the requirements of ISO Guide 34, including the differences between RMs and CRMs, the need for characterization, homogeneity, stability, uncertainty and the content of certificates;
- Interpret the requirements of documents associated with ISO Guide 34, including ISO Guide 30, ISO Guide 31, ISO Guide 35, and APLAC TC 008; and
- Understand the accreditation process.

**CEUs AWARDED:**
1.2 CEUs Awarded

**PRESENTATION STYLE:**
Lecture, discussion, and group exercises.

Hands-on exercises using Microsoft Excel provide a practical approach that enables the attendees to apply the methods in their particular testing application during and after the workshop. Several Excel templates and tools are provided for the attendees to implement.

Please bring a laptop with Microsoft Excel or compatible spreadsheet loaded in the computer for a truly interactive workshop.

**REFERENCES:**
- ISO Guide 34:2009 General requirements for the competence of reference material producers
- APLAC TC 008:2010 APLAC Requirements for and Guidance on Reference Material Producer Assessment and the Resulting Scope of Accreditation

**SCHEDULE:**
Day 1: 8:00 am-5:00 pm
Day 2: 8:00 am-4:30 pm

**Course Schedule**
- April 27-28, 2015
  ($795.00 non-members, $745.00 A2LA members)
  (*This course is held at A2LA Headquarters.*)
* Please contact A2LA if you need recommendations for hotel accommodations.

Please visit our website at [www.A2LA.org](http://www.A2LA.org) for additional information.
Proficiency Testing: 
ISO/IEC 17043 and ISO 13528

This course is a comprehensive look at Proficiency Testing (PT), including the design and operation of PT schemes, statistical methods, reporting, and interpretation. The course covers the requirements of the International Standards for PT, namely ISO/IEC 17043 Conformity assessment- General requirements for proficiency testing and ISO 13528 Statistical methods for proficiency testing by interlaboratory comparisons.

These International Standards will be demonstrated with real examples from different types of PT in different areas of application. Techniques reviewed will cover PT for testing (quantitative and qualitative) and calibration. The course also includes an overview of the A2LA accreditation process, including how accreditation for proficiency testing providers may be accomplished along with related accreditations to ISO/IEC 17025 (for testing/calibration laboratories) and ISO Guide 34 (for reference material producers).

COURSE CONTENT:
- Introduction to Proficiency Testing
  - Definitions from ISO/IEC 17043.
  - Types of proficiency testing.
  - Various standards and guides for PT.
  - National and international practices.
- Requirements of ISO/IEC 17043
  - Management system requirements (differences from ISO/IEC 17025).
  - Design of PT schemes.
  - Subcontracting.
  - Personnel and equipment.
  - Preparation of PT items.
  - Handling and shipment.
  - Data analysis.
  - Reports.
  - Communication with participants.
- Statistical Methods for PT: ISO 13528 and Other Methods
  - Statistical design of PT.
  - Homogeneity and stability assessment.
  - Determining the assigned value.
  - Evaluation of performance.
  - Use of uncertainty.
- Interpretation and Use of Scheme Results
  - For participants in PT schemes.
  - For accreditation bodies and other interested parties.
- A2LA Accreditation Process and Benefits
  - Similarities with and differences from other accreditations.

EXAMS:
A 1-hour exam is administered at the conclusion of the course.

LEARNING OUTCOMES:
After successful completion of this course, attendees will be able to:
- Apply the requirements of ISO/IEC 17043 to their own PT scheme;
- Prepare an optimal statistical design for the objectives of their scheme;
- Apply basic statistical techniques for analysis (if needed); and
- Understand accreditation requirements.

CEUs AWARDED:
1.2 CEUs Awarded

PRESENTATION STYLE:
Lecture, discussion, and group exercises.

REFERENCE:
ISO/IEC 17043 Conformity assessment – General requirements for proficiency testing: 2010
ISO 13528 Statistical methods for use in proficiency testing by interlaboratory comparison: 2006

SCHEDULE:
Day 1: 8:00 am - 5:00 pm
Day 2: 8:00 am - 4:30 pm

TARGET ATTENDEES:
Proficiency testing providers considering accreditation to ISO requirements, or seeking a better understanding of the basic requirements for PT and process improvement.

PRE-REQUISITE:
Understanding of:
- Interlaboratory comparison studies; and

Please visit our website at www.A2LA.org for additional information.
A2LA 2015 Training Course Calendar

- Assessment of Laboratory Competence
- Internal Auditing
- Introduction to Measurement Uncertainty
- ISO 15189:2012 and CLIA Clinical Laboratory Accreditation
- ISO/IEC 17025:2005 and Laboratory Accreditation
- ISO/IEC 17025:2005 Advanced: Beyond the Basics
- ISO Guide 34:2009 and Accreditation for Reference Material Producers
- Measurement Performance Improvement Using Statistical Tools
- Measurement Uncertainty Advanced Topics
- Measurement Uncertainty for Testing Labs
- Proficiency Testing: ISO/IEC 17043 and ISO 13528
- Root Cause Analysis and Corrective Action

Please visit our website at www.A2LA.org for additional information.

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- ISO/IEC 17020:2012 and Inspection Body Accreditation for Forensic Facilities
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